

# Digatron DT- 31K LT Instructions

Congratulations on your purchase of a brand new Digatron data acquisition system! We would like to hear from you regarding this instrument. Please call, mail, fax or email us with comments, questions, suggestions or improvements.

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## Welcome to Digatron

This manual covers the operation of your DT-31K LT instrument. Both racers and recreational riders can use this instrument. Racers may be interested in recording lap times with the optional infrared beacon transmitter and receiver or with the manual store switch.

This book provides the information you need to quickly set up and use your instrument. It is a great reference guide.

If you are interested in learning more about how Digatron instruments can help you analyze your engine functions and driving techniques, please visit our website, [www.digatronusa.com](http://www.digatronusa.com), or phone (509) 467-3128.

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# Instrument Functions

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## A. Power/Record



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Start Vehicle. Instrument turns on automatically. If you are using the optional infrared beacon transmitter and receiver, the instrument starts recording lap times automatically when a transmitter signal is received.

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



## B. Overall Maximums

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1.  Press & hold to view maximums and best lap time.
  2.  Press & release to cycle through up to three sets of data.
  3. Repeat steps 1 & 2 as desired.
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## C. Lap Times & Maximums per Lap (optional)

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1.  Shows lap time for the first lap of the last Event. (Button press is ignored if instrument is receiving a tach signal.)
  2.  OR  Changes lap backward or forward one. Displays flash when best lap is shown. Displays E#, when changing to a different Event. Hold to jump between Events.
  3.  Changes the functions being displayed. Maximums for the current lap are displayed.
  4.  Return to monitor / record mode.
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

## D. Reset (clear memory)

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1.  AND  Press and release at same time.
  2.  Press when display flashes. Canceled if not pressed within 10 seconds.
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## E. Power Off

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1.  AND  Turns instrument off, if it's not recording or receiving a tach signal.

**OR**

The instrument will turn off automatically if it does not receive any button presses or a tach signal.

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## Battery Installation

Two AAA batteries power the DT-30K. These allow the instrument to run for 40 hours with the backlight on and 150 hours with the backlight off. The instrument will display *lob*, signaling that the batteries are low, several hours before the functions becomes inaccurate.

To replace the batteries, remove the screw from the battery door on the back of the instrument. Replace the two batteries, observing battery polarity.

If your instrument is stored for a long period of time, remove the batteries.

## How Time is Displayed






Time is displayed as a 20 second timer. After 19.99 seconds the displayed time wraps back to zero. To see total time, up to 19:59 minutes, press and hold the Time button.

## Setting Limits and Warning Lights

Limits and warning lights warn you of conditions that could be harmful to your vehicle's engine. They should be set at levels that allow you to react to the visual warnings before engine damage occurs.

### Setting the Engine Limits and Delay Time

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-  From monitor/record, instrument enters Set Up mode. Delay time will be the first limit, see next page for explanation.
  -  O  R Press either button to change the number being displayed. Hold the button to change the number faster.
  -  Press to set next limit. Repeat steps 2 & 3 until all limits and calibration numbers are set.
  -  Press to return to monitor/ record mode.
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Function limits are set in the following order: Delay Time, Temp1 (C1), Temp2 (C2), Tach (RPM) and Tach calibration number.

Also, if you are not using a function on your instrument, use a shorting plug and set that function's limit to any number greater than 200.

### About Delay Time (Optional, for Racing)

**Some sanctioning bodies do not allow racers to use infrared beacon transmitters and receivers. If this is true for you, set your delay time to .1 seconds seconds.**

The delay time allows your instrument to ignore extra beacon signals at the track. Delay time is the time, in tenths of a second, that your instrument ignores beacon signals after receiving a signal. The delay time must be less than your best possible time between beacons, or the instrument will miss your beacon signal. Delay time is set in Set Up mode.

For example, if it takes you approximately 14 seconds to complete a run, set your delay number for 12 seconds. After your instrument receives its first beacon signal, it will ignore all signals for 12 seconds.

\*Note: If you are not a racer, set your delay time to .1 seconds.

## Tach Calibration Number

The Tach limit requires two separate parameters. The first is the maximum revolutions per minute (RPM) for safe engine operation. The second number, the Tach calibration, allows the instrument to display the correct RPM for your engine. The instrument divides the Tach input signal by the Tach calibration number. This number can be .5 to 31.

The most frequently used numbers are:

- 1 - for single cylinder 2 cycle and most 4 cycle motors
- 2 - for 2 cylinder 2 cycle and 4 cylinder 4 cycle motors



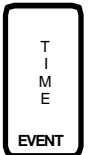
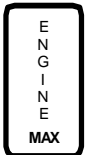



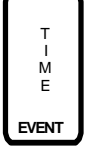


If you are unsure of the Tach calibration number for your engine, experiment. For example, if your calibration number is currently set at 2 and the RPM displayed is double what it should be, set the number to 4.

## Recording Laps and Maximums

The instrument records in sessions called Events (shown by an **E**), which start each time the instrument begins recording. Within Events, time segments (Laps, **L** on the display) are created with infrared beacon receivers and transmitters or with a store switch. To end an Event your engine must be turned off, the **Exit** button must be pressed, or the Tach must go below 200 RPM (this value can be changed on your PC).

## Setting the LED Warning Lights

Multiple warning lights can be set to the same function, but only one function can be set to a light.

1.  From monitor/record, instrument enters Set Up menu. SEL will flash on the display.
  2.  Press and SLL will flash on the display.
  3.  O R  With SLL flashing, press either button to enter Set LED Warning Lights.
  4.  Press to change the function the light will correspond to.
  5.  O R  Press either button to change the number being displayed. Hold the button to change the number faster.
  6.  O R  Press either button to set next light. Repeat steps 4 - 6 until all lights are set.
  7.  Press once to return to Set Up menu. Press again to return to monitor/ record mode.
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## Moisture

Your instrument is designed to be water resistant. We recommend keeping it as dry as possible. Please cover or remove your instrument before washing your vehicle. Digatron offers tach bags to help keep the instrument dry. If moisture does get inside the instrument, remove the endcap without switches and let the instrument air out in a dry environment. A hairdryer, on low power, can accelerate drying.

## Erratic Readings

If the instrument encounters excessive electrical interference it will display ERR on the left side of the top display. The stored data might be invalid, and may need to be erased.

To erase your stored data, see Reset.

The ERR enunciator can also indicate an incorrect instrument or sensor installation. If your instrument is doing strange things, put it in Set Limits and check to see that the limits and calibration number(s) are still where you set them (see page 5).

**Installing a resistance plug boot can normally solve electrical interference problems. We recommend using an NGK boot, # LB05EMH.**

### To avoid erratic readings:

- ◆ Keep your temperature and Tach leads separated by at least 3".
- ◆ Route the leads as far away from the coil as possible.
- ◆ Install the Tach lead on the plug wire at least 2" back from the plug boot. If you still have a problem, try a different location on the plug wire.
- ◆ Replacing one or all of your sensors often solves this problem.

**Please contact Digatron if your problem continues.**

## Button Functions

**Lap** (top, side button): (2) functions

- A. Displays lap time and number.
- B. Press and hold to show best lap time.

**Engine** (bottom, side button) (2) functions

- A. Cycles between up to three sets of data.
- B. Press and hold to show maximums and designators.

**Power / Exit** (2) functions

- A. Turns the instrument on and off.
- B. Exits Set Up and Playback modes.

**← / Light** (2) functions

- A. Press and hold to dim warning lights, and turn backlight on and off.
- B. Decreases values in Set Up and Playback.

**→ / Set Up** (2) functions

- A. Enter Set Up.
- B. Increases values in Set Up and Playback.

### **Play / Pause** (2) functions

- A. Press for lap times, lap maximums and playback.
- B. Pauses and resumes playback.

### **Reset Instrument** Erases recorded data and for troubleshooting.

- A. Press **Play / Pause** and → at the same time.
- B. Then press **Play / Pause** within 10 seconds.

## **Designator Definitions**

The following is a list of designators that can appear in the main part of your display:

- SEL select this to set your engine limits
- SLL select this to set your warning lights
- none displayed if the **Review** button is pressed and there are no laps.
- OFF displayed if a warning light is set to not come on
- CAL displayed when setting the Tach or MPH calibration number
- low displayed if your batteries are low
- RESET PLAY during a reset of memory, press the **Set Up** button to proceed with reset
- CLR displayed if a reset of memory was successful
- no CLR displayed if a reset of memory is not successful
- LLP last lap time
- CLP current lap time
- BLP best lap time
- dis lap distance
- Hrs total hours
- odo odometer
- P [ displayed when the instrument is communicating with your PC
- [ 1 2 Channel 1, Channel 2, which are temp1 and temp2 respectively
- when shown on the top of a display, the function is over ranging. when shown on the bottom of a display, the function is under ranging

The following is a list of enunciators that can appear on the side of your displays. These show what function is in the display:

- RPM1 tach
- CHT cylinder head temperature
- EGT exhaust gas temp.

## **Repairs and Warranty Information**

If you have any questions about the operation of your instrument, please call. One of our technicians will be happy to help you. Please have your instrument nearby to help while troubleshooting with the technician.

Your instrument is warranted to be free from factory defects and electronic failure for two years from the date of purchase. Physical damage during normal usage is not covered under the warranty. Be sure to fill out and return your warranty card for our records. If we do not have a card on file for your instrument, you will be charged for repairs unless you can provide us with proof of purchase date.

When returning an instrument for repair, please use the repair form found on our website or enclose a note indicating your return address, phone number and a detailed description of the problem. Send your instrument and sensors so that we can check the complete system.

Send repairs to:

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